Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Diagnostic imaging: percentage of cancers detected at screening mammography that are invasive carcinoma less than or equal to 10 mm or ductal carcinoma in situ (DCIS).

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: User-enrollee Health State

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of cancers detected at screening mammography that are invasive carcinoma less than or equal to 10 mm or ductal carcinoma in situ (DCIS).

Rationale

Three major goals of screening mammography include:

1. Find a high percentage of the cancers that exist in a screening population (cancer detection rate)
2. Find these cancers within an acceptable range of recommendations for recall or biopsy to minimize cost and morbidity (abnormal interpretation, positive predictive value [PPV])
3. Find a high percentage of small, node-negative cancers, which are more likely to be curable (rate of minimal cancer, node-negative)

There also is evidence of considerable variability in performance parameters among interpreting radiologists. These measures are designed to assess the outcome and effectiveness of the interpretation of screening mammography studies.

Evidence-based guidelines, observational studies, randomized controlled trials, systematic syntheses of research and meta-analyses all provide support for the high impact these mammography measures have on quality healthcare. Mammograms affect large numbers of patients, are frequently performed, relate to a leading cause of morbidity/mortality, in many cases demonstrate a severity of illness, and could impact high resource use.

Minimal cancer rate is another indicator of the "earliness" of cancer detection. Unlike node negativity, it includes ductal carcinoma in situ (DCIS), but among invasive cancers it is limited to node negative tumors no larger than 10 mm. Detecting a cancer when it is minimal alerts the patient about disease when it is curable, and provides the patient and treating physician more options for planning treatment as well as higher likelihood of positive outcome of treatment.

Evidence for Rationale

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Burnside ES, Lin Y, Munoz del Rio A, Pickhardt PJ, Wu Y, Strigel RM, Elezaby MA, Kerr EA, Miglioretti DL. Addressing the challenge of assessing physician-level screening performance: mammography as an example. PLoS ONE. 2014;9(2):e89418. PubMed

Carney PA, Sickles EA, Monsees BS, Bassett LW, Brenner RJ, Feig SA, Smith RA, Rosenberg RD, Bogart TA, Browning S, Barry JW, Kelly MM, Tran KA, Miglioretti DL. Identifying minimally acceptable interpretive performance criteria for screening mammography. Radiology. 2010 May;255(2):354-61. PubMed

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Humphrey LL, Helfand M, Chan BK, Woolf SH. Breast cancer screening: a summary of the evidence for the U.S. Preventive Services Task Force. Ann Intern Med. 2002 Sep 3;137(5 Part 1):347-67. [128 references] PubMed

Nass S, Ball J, editor(s). Improving breast imaging quality standards. Washington (DC): National Academy of Science; 2005.

Rauscher GH, Murphy AM, Orsi JM, Dupuy DM, Grabler PM, Weldon CB. Beyond the mammography quality standards act: measuring the quality of breast cancer screening programs. AJR Am J Roentgenol. 2014 Jan;202(1):145-51. PubMed

Rosenberg RD, Yankaskas BC, Abraham LA, Sickles EA, Lehman CD, Geller BM, Carney PA, Kerlikowske K, Buist DS, Weaver DL, Barlow WE, Ballard-Barbash R. Performance benchmarks for screening mammography. Radiology. 2006 Oct;241(1):55-66. PubMed

Schell MJ, Yankaskas BC, Ballard-Barbash R, Qaqish BF, Barlow WE, Rosenberg RD, Smith-Bindman R. Evidence-based target recall rates for screening mammography. Radiology. 2007 Jun;243(3):681-9. PubMed

TabÃ¡r L, Vitak B, Chen TH, Yen AM, Cohen A, Tot T, Chiu SY, Chen SL, Fann JC, Rosell J, Fohlin H, Smith RA, Duffy SW. Swedish two-county trial: impact of mammographic screening on breast cancer mortality during 3 decades. Radiology. 2011 Sep;260(3):658-63. PubMed

Primary Health Components

Invasive cancer; ductal carcinoma in situ (DCIS); screening mammography

Denominator Description

Number of cancers detected at screening mammography

Numerator Description

Number of cancers detected at screening mammography that are invasive carcinoma less than or equal to 10 mm or ductal carcinoma in situ (DCIS)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

The measures in this set are being made available without any prior formal testing. However, these measures are included in the Centers for Medicare and Medicaid Services (CMS) approved American College of Radiology (ACR) National Radiology Data Registry, a CMS Physician Quality Reporting System (PQRS) Qualified Clinical Data Registry since 2014.

The ACR recognizes the importance of thorough testing all of its measures and encourages ongoing robust testing of the ACR National Radiology Data Registry measurement set for feasibility and reliability by organizations or individuals positioned to do so. The ACR will welcome the opportunity to promote such testing of these measures and to ensure that any results available from testing are used to refine the measures on an ongoing basis. Since these measures are in use for quality improvement and reporting, we can support data analysis of registry data to perform the testing, such as evaluation of gaps for validity testing, and signal-to-noise estimation for reliability testing.

Evidence for Extent of Measure Testing

Blakey A. (Administrator, Quality Management Programs, American College of Radiology, Reston, VA). Personal communication. 2016 Mar 7. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Unspecified

Target Population Gender

Female (only)

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Number of cancers detected at screening mammography

Exclusions
None

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Number of cancers detected at screening mammography that are invasive carcinoma less than or equal to 10 mm or ductal carcinoma in situ (DCIS)

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Registry data

Type of Health State

Clinically Diagnosed Condition

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Does not apply to this measure (i.e., there is no pre-defined preference for the measure score)

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Screening mammography minimal cancer rate.

Measure Collection Name

National Radiology Data Registry Measurement Set

Submitter

American College of Radiology - Medical Specialty Society

Developer

American College of Radiology - Medical Specialty Society

Funding Source(s)

None

Composition of the Group that Developed the Measure

The American College of Radiology (ACR) National Radiology Data Registry (NRDR) helps facilities benchmark outcomes and process-of-care measures and to develop quality improvement programs. The composition of the workgroup is has representation from each of our six data registries:

1. CT Colonography Registry Committee (CTC)
2. Dose Index Registry Committee (DIR)
3. General Radiology Improvement Database Committee (GRID)
4. National Mammography Database Committee (NMD)
5. Lung Cancer Screening Registry Committee (LCSR)
6. IR & INR Registries (Interventional Radiology)

Committee Members

- Morin Richard, PhD, FACR, Chair of NRDR
- Kalpana Kanal, PhD, Chair of DIR
- Zuley Margarita, MD, Chair of NMD
- Abe Dachman, MD, Chair of CTC Committee
- Frank Rybicki, MD, Chair of Metrics Committee
- Siegel Eliot, MD, RSNA Liaison
- Chad Calendine, MD, Co-Chair of GRID
- Geoffrey Wiot, Co-Chair of GRID
- Jeremy Durack, Chair of IR Registry Committee
- Ella Kazerooni, Co-Chair of Lung-Cancer Screening Committee
- Deni Aberle, Co-Chair of Lung-Cancer Screening Committee

Committee Staff

- Judy Burleson, MHSA, American College of Radiology
- Mythreyi Bhargavan Chatfield, PhD, American College of Radiology

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

This measure is reviewed annually

Date of Next Anticipated Revision

2017 Mar

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in March 2017.

Measure Availability

Source available from the American College of Radiology (ACR) Web site.

For more information, contact ACR at 1891 Preston White Drive, Reston, VA 20191; Phone: 703-648-8900; E-mail: nrdr@acr.org; Web site: www.acr.org.

NQMC Status

This NQMC measure summary was completed by ECRI Institute on December 11, 2015. The information was verified by the measure developer on March 7, 2016.

The information was reaffirmed by the measure developer on March 3, 3017.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

Production

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Disclaimer

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